PROGRESS

OF

MEDICAL SCIENCE.

MEDICINE.

UNDER THE CHARGE OF

WILLIAM OSLER, M.D.,
PROFESSOR OF MEDICINE IN THE JOHNS HOPKINS UNIVERSITY, BALTIMORE, MARYLAND,

AND

GEORGE DOCK, M.D.,
PROFESSOR OF MEDICINE IN THE UNIVERSITY OF MICHIGAN.

Observations Upon the Origin of Gall-bladder Infections and upon the Experimental Formation of Gallstones.—CUSHING, in referring to the case of acute suppurative cholecystitis recently reported by Hunner, says that there seems to be little doubt but that the original source of infection in these cases is a hæmatogenous one, the bacilli first entering the portal circulation through the atrium afforded by the intestinal lesions. Fütterer has experimentally shown that organisms so introduced are rapidly eliminated by the liver, and consequently appear in the biliary passages.

There is a very general belief, however, that biliary infection occurs as a result of the organisms ascending from the intestine by way of the common duct. Gilbert, in 1894, held that the B. coli communis played the most important rôle in cholecystitis, because it was found by him in the duodenum in far greater numbers than any other organism, and because it possessed motile properties which enabled it to enter the common duct. Richardson, more recently, has also supported the view that infections of the bile passages result from organisms entering from the intestine by way of the common duct.

More recent work would appear to throw some doubt upon this theory. The infection is probably in many cases from above downward, and not from below upward. Cushing, Gilbert, and Dominici, in working on the flora of the intestinal tract, have shown that the duodenum, especially of rabbits, is very free from micro-organisms. The former injected 1 c.cm. of a twenty-four-hour bouillon culture of B. typhosus into the ear vein of a rabbit. Two days later the bacillus in pure culture was recovered from the gall-bladder and duodenum. Here, of course, the infection was of hæmatogenous origin. Contrary to the general belief, the bile is a good culture medium for most organisms.

The work of Létienne shows how often organisms are present in the gall-bladder in association with lesions elsewhere in the body. Out of forty-two cases he found the bile monomicrobic seven, polymicrobic seventeen, and sterile eighteen times.

According to Richardson, the typhoid bacillus is present in the bile at some time during the disease in the great majority of cases of typhoid fever. He has also shown that the bacilli are generally agglutinated into large clumps. In six autopsies where he examined the bile with this object in view agglutination was present in five. In the sixth case the patient's blood had not given the Widal reaction during life.

The B. coli communis has also been found in clumps in the gall-bladder. Just what relation these organisms have on the deposition of bilirubin, calcium, and stone formation has not been definitely determined. There is a probability that the clumps of organisms may form a nucleus of a gallstone.

The simple presence of organisms in the gall-bladder does not seem sufficient to set up inflammation of the mucosa nor to produce cholelithiasis. Some other factor, presumably some form of irritation, such as traumatism or some hinderance to the proper evacuation of the gall-bladder, is essential.

Cushing experimentally produced several small biliary calculi of typhoidal origin obtained from gall-bladders of rabbits, in both cases at the time of inoculation the biliary apparatus having been intentionally injured. These calculi were in the early stages of development, and were similar in appearance to those described by Richardson, Gilbert, and Fournier. The chief constituents were bile-pigments combined with calcium.

Galippe first advanced the theory of the infectious origin of gallstones in general in 1886. The chief credit of the demonstration of the infectious nature of cholelithiasis belongs to Gilbert and his collaborators. Their first success was met with in January, 1897, when they obtained a definite stone from the gall-bladder of a dog previously inoculated with the B. coli communis. In May, 1897, Mignot, who had been working along the same line, obtained three small experimental calculi formed in the gall-bladder of a guinea-pig by the B. coli communis.

Mignot believes that one of the conditions essential to the formation of calculi is the extreme attenuation in virulence of the organism employed. Adopting this view, Gilbert and Fournier obtained definite calculi with the B. typhosus and B. coli communis by first attenuating these organisms by heat. The agglutination of the typhoid bacilli and the bacillus coli communis frequently seen in the bile may be analogous to this attenuation. Richardson believes that the agglutinated clumps form the nuclei about which bile-salts and pigments are deposited.

From the experimental work done the infectious nature of cholelithiasis seems well established.—*Johns Hopkins Hospital Bulletin*, August–September, 1899, p. 166

Angina and Rheumatism.—KRONENBERG (*Münchener med. Wochenschrift*, 1899, No. 27) reports a case which illustrates the relationship, often noted by others, between angina and rheumatism. It also illustrates how difficult it is sometimes to distinguish between certain cases of sepsis, ordinarily so called, and rheumatic arthritis, making the belief that rheumatism is simply a form of sepsis very inviting. A workman complained of impaired hearing, and was found to have double nasal hypertrophies. There was no history of purulent otitis, and the man had never had rheumatic pains. In October the hypertrophy was removed from one nostril with a cold snare. Three days later follicular angina began on the same side, but cleared up in a week. The wound healed well. A month later an operation was made on the other side. Three days after the operation there was pain in the wound and a small amount of secretion. Six days after the operation there was a chill, and the next day painful swellings developed in both knees, ankles, elbows, and shoulders. There was no angina. Under salicylates the patient improved so that he could leave the bed in five days; but in a few days more the joints swelled again, and again reacted favorably to salicylates. Soon after this fever reappeared, with pain in the chest and a systolic murmur over the heart. By the next day a diastolic murmur was present, and two days later there was pericarditis, with effusion. In a week the pericarditis subsided. There was no fever, but two days later symptoms of pleurisy began, followed by a serous exudate. This rapidly subsided; but during all this time one or the other joint occasionally became swollen. The operation wound was entirely healed. Five days after the signs of pleurisy subsided pneumonia developed in both bases. The physical signs improved in a few days; but a short time afterward there was a sudden rise of temperature, with cyanosis, followed by œdema of the lung and death. During the whole time the patient's urine was free from albumin, except for a slight cloudiness in the last few days. As the author remarks, the rheumatism in this case resembled very closely the picture of pyemia, and in the absence of an autopsy it hardly seems proper to consider the symptoms the result of anything else. At the same time the difference between such a case and an ordinary case of acute articular rheumatism is rather one of degree than of kind.

Hour-glass Stomach.—According to HIRSCH, reports of this interesting anomaly are infrequent in literature, being confined chiefly to English and American journals. In the congenital variety the constriction is in the middle of the organ, and the narrowed portion shows no pathological changes in the mucous membrane, the serous or muscular layers. SIEVERS (*Berlin. klin. Wochenschrift*, 1899, No. 15) reports the following instructive case: A servant girl, aged twenty-six years, entered the hospital with symptoms of acute diffuse peritonitis, from which she died three and a half days after the first symptoms. She had always been healthy until five to six weeks previous to this illness. At that time she had gastric ulcer. She recovered from this, and had no further trouble until two days before entering the hospital, when she had a sudden attack of severe pain in the lower right abdomen, followed by marked distention and tenderness. Autopsy showed an hour-glass stomach. The organ was divided in the middle into two almost equal parts. Both halves measured 14 cm. from cardia and pylorus to the constriction. The cardiac half had a breadth of 15 cm. from the lesser to the greater curvature; the pyloric half in the same direction a few cm. less. The two halves were united by a tube-like portion, 2 cm. long and 2½ cm. wide, so narrow that only the little finger could be passed through. A centimetre from the constriction, toward the lesser curvature on the pyloric side, was a round opening 1 cm. in diameter, caused by a perforating round ulcer. The tube connecting the two halves was normal throughout all of its layers. Diagnosis of this condition during life is very difficult; the cases are usually found accidentally at necropsies. At times it is possible by distending the stomach to demonstrate its hour-glass form; but only one-half might be distended. Persistence of succussion after withdrawing everything possible with the tube suggests that the fluid remained in the pyloric half, the tube only reaching into the cardia. Some authors believe that if, in lavage of the stomach, food flows from the tube after the clear fluid, it is a sign of hour-glass stomach; but, as Riegel pointed out, this occurs in dilatation of severe degree without constriction. It is unfortunate that diagnosis cannot be made with certainty, since surgeons might be able to relieve some of the dangers associated with the anomaly, such as volvulus. Schmid-Monnard recently published a case in which, during life, a diagnosis of ulcus ventriculi, with resulting hour-glass stomach and incomplete stenosis, was made. By excising the ulcer and the thickened portion of the organ its form was regained and recovery resulted. Wölfler, operating on a case undiagnosticated, performed gastro-anastomosis. It is noteworthy that in the author's case the hour-glass stomach from birth performed its functions well until the twenty-sixth year, and that gastric ulcer caused death. In thirteen of the twenty-two cases of congenital hour-glass stomach—*i. e.*, almost 60 per cent—collected by Hirsch there was an ulcer not far from the constriction, and the author suggests the possibility of a relation between these.

Traumatic Paralysis Agitans.—KRAFFT-EBING reports 7 cases of the traumatic variety (4 men and 3 women) in a total of 110 cases of paralysis agitans (67 men and 43 women). Of these 7 cases, in 5 the trauma was a contusion or a sprain, in 1 there was contusion with freezing of the entire extremity, in 1 a contusion associated with a broken rib. In 19 cases of paralysis agitans Heimann reports 3 caused by mechanical traumatic conditions, Bychowski 2 in 23, Eulenberg 2 in 46 cases. The author emphasizes the fact that if the disease is traumatic it always begins at the location of the trauma, for instance, in the leg; while the non-traumatic variety, according to the classical course, begins at the distal portion of the upper extremity. The fact that paralysis agitans occurs in the young disproves the idea that atheromatous conditions play an important rôle. In Heimann's experience one patient was 33; in Leva's, one was 40; while among the author's cases one was 40 and another 44. The slightest and most varied trauma can cause paralysis agitans. In 27 cases Walz gives as causes in 6 general concussion; in 4, wounding by stab or cut; in 1, burning; in 1, freezing; in 4, sprain, luxation, or fracture; in 8, contusion, etc. Little is known of the pathogeny of these traumatic cases. Gowers emphasizes the importance of the associated shock. Charcot believed in an ascending neuritis as the link between the trauma and the paralysis agitans, an idea borne out in a case of Leyden's which came to post-mortem. Notwithstanding the fact that in several of his cases Krafft-Ebing was able to exclude the psychical factor, and in none of his cases could he demonstrate an ascending neuritis at the time of the status præsens, which was one year after the trauma, he urges the advisability of considering, especially in cases seen early, the possibility of ascending neuritis as a cause of traumatic paralysis agitans. If such were the cause the possibility of preventing serious disease by antiphlogistic and anodyne treatment would be much greater.—*Wiener klin. Wochenschrift*, 1899, No. 2.

Endocarditis.—HARBITZ (*Deutsche med. Wochenschrift*, 1899, No. 8.), from an etiological stand-point, divides endocarditis into two great groups:

1. Infectious endocarditis. Under this group are several subdivisions, classified according to the specific micro-organisms causing the disease, such as streptococcus, staphylococcus and gonococcus, endocarditis, etc.

2. Non-infectious endocarditis, or cases in which the specific infectious agent is not known, as, for example, rheumatic endocarditis. Extensive investigations concerning the cause of endocarditis make it not improbable that a number of cases of this latter group should be included in group 1. In all cases examined cultures were made on agar, serum, bouillon, and gelatin from the excrescences of the affected valves. Cover-glass preparations and sections were also prepared from the vegetations, and animals were inoculated. The cases arising principally from infection with the ordinary pus-germs—streptococcus, staphylococcus, and pneumococcus—showed such variations in their clinical course that a division into two groups seems justifiable: (*a*) In this group there are a large number of cases of acute endocarditis, which, as a rule, arise from a pus focus. They present the picture of a rapidly developing pyæmia with high fever. On section these cases generally show a diphtheroid membrane on the valves, ulcerations and necrotic foci in the valve substance, and in some cases, at the base of the valve, deep in the muscle, abscess-cavities. Multiple abscess of the skin, heart muscle, spleen, kidneys, eye, etc., are usually found; also infectious infarcts in the spleen and kidneys. The author regards many of these cases of endocarditis as a localization of the specific virus near other abscesses. They are most often caused by pyogenic staphylococci, and resemble the classical picture of an acute infectious endocarditis. (*b*) There is a large group of cases of infectious endocarditis where the inflammation of the valve entirely dominates the disease picture, and is not, as in the former group, a symptom of a general infection, but is probably the central focus from which the rest of the body becomes infected. These cases are mostly of the streptococcus or pneumococcus variety. The long duration of the disease in these cases is very striking. Ordinarily in infectious endocarditis death occurs in a few days to a few weeks. In the cases now described death sometimes does not occur until after many months. The first symptoms are usually a slight fever, rheumatic pains, general malaise; later, signs of loss of compensation, palpitation, dyspnœa, cough, hemorrhage in different parts, cyanosis, and œdema. Often the fever is not marked. In other cases it is strongly remittent or intermittent. If, at the same time, there are great pain and effusion into the joints, the case closely resembles acute articular rheumatism. At times a rapidly developing anæmia and emaciation are the most striking symptoms. The symptoms on the part of the kidneys are very interesting. They are often so striking that a clinical diagnosis of acute hemorrhagic or parenchymatous nephritis is made. In nine fatal cases of tuberculosis the author found verrucose vegetations resembling those found in rheumatic cases.

The tubercle bacilli were never found, the cultures remaining sterile in all cases. In one case a small clump of tubercle bacilli was found in a cover-glass preparation. In other cases two guinea-pigs which had been inoculated with the valve excrescences died of tuberculosis. In other diseases, such as Bright's disease and carcinoma, warty vegetations were found on the edges of the valves, but the author could not discover micro-organisms in them.

SURGERY.

UNDER THE CHARGE OF

J. WILLIAM WHITE, M.D.,
PROFESSOR OF CLINICAL SURGERY IN THE UNIVERSITY OF PENNSYLVANIA; SURGEON TO THE UNIVERSITY HOSPITAL;
ASSISTED BY
ALFRED C. WOOD, M.D., INSTRUCTOR IN CLINICAL SURGERY, UNIVERSITY OF PENNSYLVANIA; ASSISTANT SURGEON, UNIVERSITY HOSPITAL.
AND
C. L. LEONARD, M.D., ASSISTANT INSTRUCTOR IN CLINICAL SURGERY IN THE UNIVERSITY OF PENNSYLVANIA.

Retraction of the Plantar Aponeurosis.—Féré (*Revue de Chirurgie*, September, 1899) reports a case in which a contraction of the plantar aponeurosis occurred in conjunction with the appearance of contractions of the palmar fascia of the hands. The lesion is of the same nature—a thick casing, with contraction and pain on standing. It is characterized by difficulty in walking, with pain along the inner margin of the foot and especially at the posterior insertion of the plantar fascia. There is a tendency to relieve the pain by turning the foot outward and walking on the outer margin. This tendency and the difficulty in walking, on account of the pain, with, in marked cases, transverse wrinkles due to the contraction, are the characteristics of the disease.

This pain, however, even with its localization, cannot be considered as absolutely characteristic, as it is met with when the fascia is overstretched, as in very obese persons, or in neurasthenics, when the muscular tone is diminished. In the latter form they are more liable to be intermittent in character. This is undoubtedly a progressive affection, and is undoubtedly of neuropathic origin. In this particular case it developed in a person having a marked neuropathic tendency, and in whom contractions of the palmar fascia were also present.

The Resection of the Cervical Portion of the Œsophagus for Carcinoma.—De Quervain (*Archiv f. klin. Chirurgie*, 1899, Band lviii., Heft 1–4), after a résumé of the literature and a careful study of fourteen cases, including a report of one of his own cases, comes to the following conclusions:

1. All carcinomata of the œsophagus that have not involved the surrounding tissues, and the lower borders of which do not extend below the upper margin of the arch of the aorta, are suitable for extirpation through the